

COLUMBIA RIVER REGIONAL FORUM

Water Quality Team

August 9, 2005

Facilitator Summary Notes

Facilitator: Robin Harkless

The following are summary notes of the discussion from the August 9th Water Quality Team (WQT) meeting. They are meant to serve only as a reminder of issues discussed and actions to be taken prior to the September 13th meeting. They are NOT meant to serve as a formal record of the conversation. Questions concerning these notes may be raised at the next meeting or via email.

Updates

IT: John Palensky, NOAA, provided an update on the development of the IT Work Plan (meeting schedule and agenda items up to July 2006), an issue tracking system which a sub-group of the IT has been focusing on in response to a Mainstem amendment recommendation from the NPCC for the IT to have a broader and more forward-looking focus. One of the issues included on the work plan is to have an update on 'water quality in the lower river' during the August IT meeting. An extended handout with more details on discussions and actions for each issue has also been developed; an updated version will be available on the NOAA website sometime in the Fall, as NOAA has recently designated a resource to update the website. John and the IT members welcome input on the Work Plan.

SCT: The SCT is in the process of prioritizing projects for '06 CRFM funding. The projects are estimated to require about \$90 million while the expected budget is about \$74 million. The WQT will invite Bill Hevlin (NOAA), chair of the SCT, to a future WQT meeting to give an update on the prioritization process.

TMT: Dave Wills, USFWS, reported that the TMT has expressed interest in Lower Columbia water quality issues and welcome any updates from the WQT sub-group (see below) as the process continues. This update will be added to the TMT agenda in October.

Lower Columbia River Water Quality Monitoring Subgroup: Mark Schneider, NOAA, provided an update on the work of this WQT subgroup. Gary Fredericks, NOAA, provided a handout of notes from the July 7 and 25 meetings, and a summary of issues and next steps discussed by the group. The COE is developing a synopsis of literature review of gas impacts on resident and anadromous species in the lower river. There will be an opportunity to review the synopsis and identify data gaps, around November. The state water quality agencies were not present for the July 7 or July 25, 2005 sub-group meeting.

A comment was made that the Lewis River and other areas may affect listed species downstream, and returning adults. Will the subgroup look at this? The contractor

developing the synopsis will look at effects of low levels of gas. The sub-group will meet again after the synopsis is complete. The WQT, SCT and SRWG will be looking at a proposal to measure chum, TDG in chum redds, and project tailwater. It is anticipated that the WQT will develop a list of critical questions related to Camas/Washougal. These questions may be used to develop a proposal for TDG monitoring and investigation of potential effects of TDG exposure of chum eggs and larvae. Next steps: The synopsis will be completed and reviewed by water quality and action agencies, and further discussed at the October WQT meeting.

Homework from July WQT Meeting: Mike Schneider, COE, will send a report on the computational fluid model and TDG exceedance data as promised to Agnes Lut, ODEQ, Chris Maynard, WDOE, and Mark Schneider, NMFS when it is complete.

WQT Guidelines

The most current draft of the WQT Guidelines was emailed to WQT members with a request for review and feedback to move toward finalizing the document. Comments were received and discussed today. One main issue raised was on WQT membership and the need to define voting (and non-voting) members. Mark Schneider, NOAA, reported that a letter was sent out to groups that have been participating in the WQT. The letter requests a formal response identifying a specific person to represent the agency, tribe, utility or other entity as a formal member of the WQT. The letter also requests identification of an alternate member. The WQT agreed to re-visit this section of the guidelines after responses to the letter are received. A suggestion was made to send the letter out annually.

It was clarified that the 'Columbia River Basin Forum' is no longer in existence; all references to this group will be removed from the Guidelines. However, the Regional Forum does exist. There is not a current list of Emergency Team members; the group decided that the current participants on the WQT would also be called upon in the event of a water quality emergency requiring an emergency meeting.

ACTION: John Piccinninni, BPA, will check on whether the current monitoring plan includes 'funding for spot checking monitoring equipment', as listed under Scope, B: TDG in the Guidelines.

Velocity and Temperature Gradients in the Lower Snake River During Juvenile Fall Chinook Migration

Chris Cook, Pacific NW National Laboratory, presented information about stratification of the Lower Snake during juvenile fall Chinook migration during mid- to late-summer months. He thanked Berhon Dibrani and John Piccinninni (who were present at the meeting) and others who contributed to the research. Flow augmentation from Dworshak appears to provide a temperature benefit to the upper water column at Lower Granite, and Chris noted that more could be done to provide a benefit (recognizing there are operational constraints on the system.) Two years of study revealed an anomaly at Little Goose and Lower Monumental, that temperatures were warmer at the mid-pool vs. shallower and deeper water. Researchers hypothesized that this is due to wind

magnitudes. This discovery has led to improvements to the CE-QUAL-W2 modeling, using dynamic shading algorithms and refined geometry to get at wind impacts to temperature during flow augmentation. While improvements are being made to the model, it is ready for general use (e.g. for input to the Fish Individual Numerical Simulator (FINS) to compare operational scenarios and how they influence exposure to warmer water and velocity, etc).

Chris concluded with the following recommendations:

- Provide Dworshak temperature releases that match Snake discharge throughout the augmentation period to provide the best benefit to the upper water column at Lower Granite;
- Continue mid-pool data collection and put in longer-term bottom mounted ADCP measurements to better understand the mid-pool temperature anomaly and effects of wind on this anomaly;
- Use the CE-QUAL-W2 models while continuing to make improvements and input 2005 data.

BPA will be producing a final report on the research; anyone interested in receiving a copy of the report should contact Chris at chris.cook@pnl.gov.

RPA 143 Group

Mike Schneider, COE, provided an update/overview to the WQT on work of the RPA 143 subgroup. Currently, data are being collected on the Lower Snake and temperature data at Dworshak. There is a sampling plan for the Snake River above the Clearwater, and the group is seeking true measurement in the Snake by doubling up sampling areas at one particular site. Mike also provided information on current conditions, model development and projects. Projects include looking at effects of increased flows and resulting warmer temperatures on fish, real-time monitoring in parts of the river, and verification runs of the Dworshak pool. The group will look next at the shading algorithms mentioned in Chris Cook's presentation; a technical work group plans to meet in early September to look at Lower Snake temperature modeling and validation issues.

Winter TDG Monitoring

Jim Adams, COE, provided winter TDG monitoring information from October-March 1995-2004, with statistics on average, minimum, maximum, and exceedances at different flows (the spreadsheet was put together by Mike Schneider). He provided a second handout of specific 'episodes' of exceedances, defined as greater than 110% TDG. Most exceedances that occur in September are due to temperature spikes. Exceedances that occur during the rest of the year were due to flows exceeding generation capacity which resulted in spill. Most of these occurred in February and March. However, since the implementation of the many TDG reducing strategies along the Columbia and Snake rivers and river flows over the past several years have been relatively low, the frequency of these exceedances has been significantly reduced.

Jim requested that the WQT review the information and provide feedback at a future WQT meeting on winter TDG monitoring, including: What is the purpose of winter

monitoring? Where should we monitor? Why? What criteria are important, and what is the value for an exceedance? WQT members suggested that the discussion also include a history of why winter monitoring began in the first place. This raised initial questions about whether state standards might be modified as a result of any changes to winter monitoring. Winter TDG monitoring will be on the September WQT meeting agenda.

Next Meeting, September 13, 1-4:00 pm

Agenda items include:

- Updates – TMT, SCT, IT, WQT sub-group
- WQT Guidelines: Follow-up on Membership discussion
- Winter TDG Monitoring Discussion